

CLAIMS

1. A multi-speed transmission comprising:

an input shaft;

an output shaft;

first, second and third planetary gear sets each having first, second and third

5 members;

said input shaft being continuously interconnected with a member of said planetary gear sets, and said output shaft being continuously interconnected with another member of said planetary gear sets;

10 a first interconnecting member continuously interconnecting said first member of said first planetary gear set with said first member of said second planetary gear set and said first member of said third planetary gear set;

a second interconnecting member continuously interconnecting said second member of said first planetary gear set with said second member of said second planetary gear set;

15 a first torque-transmitting mechanism selectively interconnecting a member of said first planetary gear set with a member of said second or third planetary gear set;

a second torque-transmitting mechanism selectively interconnecting a member of said second planetary gear set with a member of said first or third planetary gear set; the pair of members interconnected by said second torque-transmitting mechanism being different from
20 the pair of members interconnected by said first torque-transmitting mechanism;

a third torque-transmitting mechanism selectively interconnecting a member of said third planetary gear set with another member of said first or second planetary gear set; the pair of members interconnected by said third torque-transmitting mechanism being different from the pair of members interconnected by said first or second torque-transmitting
25 mechanism;

a fourth torque-transmitting mechanism selectively interconnecting a member of said first or third planetary gear set with a stationary member;

30 a fifth torque-transmitting mechanism selectively interconnecting a member of said second or third planetary gear set with said stationary member; the member connected with said stationary member by said fifth torque-transmitting mechanism being different from the member connected with said stationary member by said fourth torque-transmitting mechanism;

35 a sixth torque-transmitting mechanism selectively interconnecting a member of said first or second planetary gear set with another member of said first, second or third planetary gear set, or with said stationary member; the pair of members interconnected by said sixth torque-transmitting mechanism being different from the pair of members interconnected by said first, second, third, fourth or fifth torque-transmitting mechanism;

40 a seventh torque-transmitting mechanism selectively interconnecting a member of said second or third planetary gear set with another member of said first, second or third planetary gear set, or with said stationary member; the pair of members interconnected by said seventh torque-transmitting mechanism being different from the pair of members interconnected by said first, second, third, fourth, fifth or sixth torque-transmitting mechanism;

45 said torque-transmitting mechanisms being engaged in combinations of two to establish at least eight forward speed ratios and at least one reverse speed ratio between said input shaft and said output shaft.

2. The transmission defined in claim 1, wherein said first, second and third torque-transmitting mechanisms comprise clutches, and said fourth, fifth, sixth and seventh torque-transmitting mechanisms comprise brakes.

3. The transmission defined in claim 1, wherein said first, second, third and sixth torque-transmitting mechanisms comprise clutches, and said fourth, fifth and seventh torque-transmitting mechanisms comprise brakes.

4. The transmission defined in claim 1, wherein said first, second, third and seventh torque-transmitting mechanisms comprise clutches, and said fourth, fifth and sixth torque-transmitting mechanisms comprise brakes.

5 5. The transmission defined in claim 1, wherein said first, second, third, sixth and seventh torque-transmitting mechanisms comprise clutches, and said fourth and fifth torque-transmitting mechanisms comprise brakes.

10 6. The transmission defined in claim 1, wherein planet carrier assembly members of each of said planetary gear sets are single-pinion carriers.

7. The transmission defined in claim 1, wherein at least one planet carrier assembly member of said planetary gear sets is a double-pinion carrier.

8. A multi-speed transmission comprising:
an input shaft;
an output shaft;
a planetary gear arrangement having first, second and third planetary gear sets,
5 each planetary gear set having first, second and third members;
said input shaft being continuously interconnected with a member of said planetary gear sets, and said output shaft being continuously interconnected with another member of said planetary gear sets;

a first interconnecting member continuously interconnecting said first member
10 of said first planetary gear set with said first member of said second planetary gear set and said
first member of said third planetary gear set;

a second interconnecting member continuously interconnecting said second
member of said first planetary gear set with said second member of said second planetary gear
set; and

15 seven torque-transmitting mechanisms for selectively interconnecting said
members of said planetary gear sets with a stationary member or with other members of said
planetary gear sets, said seven torque-transmitting mechanisms being engaged in combinations
of two to establish at least eight forward speed ratios and at least one reverse speed ratio
between said input shaft and said output shaft.

9. The transmission defined in claim 8, wherein a first of said seven torque-
transmitting mechanisms is operable for selectively interconnecting a member of said first
planetary gear set with a member of said second or third planetary gear set.

10. The transmission defined in claim 8, wherein a second of said seven
torque-transmitting mechanisms is operable for selectively interconnecting a member of said
second planetary gear set with a member of said first or third planetary gear set; the pair of
members interconnected by said second torque-transmitting mechanism being different from
5 the pair of members interconnected by said first torque-transmitting mechanism.

11. The transmission defined in claim 8, wherein a third of said seven
torque-transmitting mechanisms is selectively operable for interconnecting a member of said
third planetary gear set with a member of said first or second planetary gear set; the pair of
members interconnected by said third torque-transmitting mechanism being different from the
5 pair of members interconnected by said first or second torque-transmitting mechanism.

12. The transmission defined in claim 8, wherein a fourth of said seven torque-transmitting mechanisms is selectively operable for interconnecting a member of said first or third planetary gear set with said stationary member.

13. The transmission defined in claim 8, wherein a fifth of said seven torque-transmitting mechanisms is selectively operable for interconnecting a member of said second or third planetary gear set with said stationary member; the member connected with said stationary member by said fifth torque-transmitting mechanism being different from the
5 member connected with said stationary member by said fourth torque-transmitting mechanism.

14. The transmission defined in claim 8, wherein a sixth of said seven torque-transmitting mechanisms selectively interconnects a member of said first or second planetary gear set with another member of said first, second or third planetary gear set or with said stationary member; the pair of members interconnected by said sixth torque-transmitting
5 mechanism being different from the pair of members interconnected by said first, second, third, fourth or fifth torque-transmitting mechanism.

15. The transmission defined in claim 8, wherein a seventh of said seven torque-transmitting mechanisms selectively interconnects a member of said second or third planetary gear set with another member of said first, second or third planetary gear set or with said stationary member; the pair of members interconnected by said seventh torque-
5 transmitting mechanism being different from the pair of members interconnected by said first, second, third, fourth, fifth or sixth torque-transmitting mechanism.

16. The transmission defined in claim 8, wherein planet carrier assembly members of each of said planetary gear sets are single-pinion carriers.

17. The transmission defined in claim 8, wherein at least one planet carrier assembly member of said planetary gear sets is a double-pinion carrier.